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# Job Performance Tests for U/AH-1 Helicopter Mechanics

## Volume II: Administrative Duties and Job Knowledge Tests

Paul W. Mayberry  
Nell B. Carey

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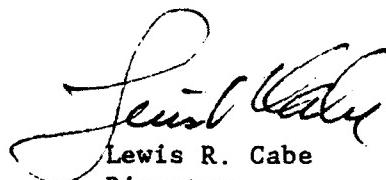
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2. Hands-on performance tests and job knowledge tests were developed for several U/AH-1 helicopter maintenance specialties as part of the Marine Corps Job Performance Measurement Project. The purpose of this information memorandum is to disseminate these performance measures to Marine Corps personnel managers, training instructors, and interested researchers who may find them useful.
3. This work comprises two parts: volume I contains the hands-on performance test, and this volume presents the administrative duties and job knowledge tests.

  
Lewis R. Cabe  
Director  
Manpower and Training Program

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## **Job Performance Tests for U/AH-1 Helicopter Mechanics**

**Volume II: Administrative Duties  
and Job Knowledge Tests**

**Paul W. Mayberry  
Neil B. Carey**

***Operations and Support Division***



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## **ABSTRACT**

Hands-on performance tests and job knowledge tests were developed for several U/AH-1 helicopter maintenance specialties as part of the Marine Corps Job Performance Measurement Project. The purpose of this information memorandum is to disseminate these performance measures to Marine Corps personnel managers, training instructors, and interested researchers who may find them useful.

This work comprises two parts: volume I contains the hands-on performance test, and this volume presents the administrative duties and job knowledge tests.

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## **INTRODUCTION**

The Marine Corps Job Performance Measurement (JPM) Project is a major effort to measure on-the-job performance of enlisted Marines. The performance measures are used to validate the enlistment test that selects and classifies military recruits. The performance tests also have value in providing unit commanders and training instructors with detailed information concerning the relative strengths and weaknesses of their personnel.

Representative military occupational specialties (MOSSs) within the mechanical occupational field were selected for performance measurement. Hands-on performance tests and written job knowledge tests were developed. This document contains the performance tests for the U/AH-1 helicopter mechanics that were tested (MOS 6114). A forthcoming CNA research memorandum will detail the test development process. The purpose of this document is to disseminate these performance measures to Marine Corps personnel managers, the training community, and interested researchers who may find them useful.

The performance measures are organized into the following sections:

- Hands-on performance tests with equipment/materials required for testing and procedures to set up each testing station
- Tests of administrative duties
- Job knowledge test with correct alternatives noted.

The test development and administration was conducted by the American Institutes of Research under subcontract to the Center for Naval Analyses.

## **TRAINING MATERIALS FOR HANDS-ON TEST ADMINISTRATORS**

Retired and former Marine Corps staff noncommissioned officers were hired as test administrators. These individuals did not have a vested interest in the outcomes of the tests but were experienced in the helicopter maintenance occupational field and were accustomed to working with young Marines. Each task involved the performance of discrete and observable steps that could be scored objectively in a pass/fail format. To minimize any ambiguity or subjectivity associated with scoring the hands-on test, definitive scoring criteria were established and test administrators completed an extensive training course. This training focused on performing all tasks as well as learning the procedures involved in standardized test administration.

The following materials provide general guidelines for test administrators to observe in the conduct of hands-on testing. The guidelines focus on standardized test administration procedures and codes for professional conduct. Besides these requirements, test administrators were thoroughly instructed in the proper performance of each hands-on task.

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# **A Guide for Test Administrators of**

## **USMC Mechanical Hands-on Tests**

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**Prepared by the American Institutes for Research**

### **Overview**

**Training of Hands-on Test Administrators (TAs) will be done essentially the same way at all test sites -- Camp Lejeune, MCAS New River, MCAS Tustin, and Camp Pendleton. The training cadre will be the same at all test sites to the greatest extent feasible.**

**The HO Test Stations are shown at the end of this Guide. CAUTION: The assignment of tests to stations is tentative. Assignments were made on the basis of time estimates and are subject to change pending tryout.**

**Each HO Test Site is comprised of eight fixed test stations, each manned by a TA. Each station covers one to several tasks. Each station will test for one hour. Examinees rotate to their next stations at the end of the hour. Eight Marines will complete HO testing daily.**

**The specific points that will be emphasized and practiced during TA training are included on the following pages.**

## **1. Your Role as Scorers of Hands-On Tests**

We will be training you to give the hands-on tests. Your role in this part of the project is critical. You've been hand picked because we think you know the tasks and can do a good job. Here are some general rules you must remember.

- A. Your job is to make it possible for each Marine to do the best job he can or wants to do on each test you give.**
- B. Give clear instructions and be certain the Marine understands them.**
  - (1) Look at the Marine. Practice the directions until you can read/speak them in a natural manner.**
  - (2) Remember that while you may be giving the directions for the 15th time it is the first time that the examinee has heard them.**
- C. Follow the instructions on the scoresheet exactly as written -- do not shorten or add to them.**
- D. Keep a professional demeanor. Show that you take the test seriously, and that the Marine being tested is doing something important and worthwhile.**
- E. Be sure to complete all of the information asked for on the scoresheet.**
- F. Score every performance measure every time. When you finish a test, scan the scoresheet to be sure there are no steps left blank.**
- G. Practice good test security at all times.**

- 1) We will promise the Marines that no one on the base will see their score or scoresheets.
  - 2) If anyone other than the project staff asks to see any of your scoresheets, politely refuse and refer them to the Hands-on Test Manager or Test Site Manager.
- H. Do not speak to the Marine being tested except when indicated on the scoresheet, or when allowed under the general rules laid out in the set-up sheet.
- I. Do not reveal, by the way you look or move what you think of the Marine's performance.
  - 1) Sighs, frowns, raised eyebrows can affect the examinee's performance on your test subsequent tests.
  - 2) If a Marine asks how he did, just tell him you are not allowed to say.
- J. DO NOT coach, teach, help, train, in any way except when specified in the test materials.
  - 1) If you are allowed to correct an error, do so without comment to the Marine.
  - 2) Be certain the Marine cannot correct his own error before stepping in.
  - 3) Some tests allow the Marine only one chance to perform the task or step correctly.
  - 4) Do not stop a test until the rules for stopping the test have been met.
  - 5) You may repeat instructions but in only the words printed on the scoresheet.

- 6) If the Marine asks during testing "What should I do next," or "Is this right," reply something like "Do the best you can," or "Do what you think is correct."

## 2. Giving the Hands-on Tests

- A. At the beginning of every test day, you will be responsible for setting up an assigned test station.
  - 1) You are responsible for ensuring that you have the equipment and materials you need to conduct the test.
  - 2) The test station must be ready to begin testing immediately after the Marines arrive.
- B. Each Marine being tested will have been briefed about the project and given a hands-on schedule sheet.
  - 1) Copy his last name and ID onto his scoresheet and administer the tests at your station.
  - 2) Retain the schedule until he has completed the station.
  - 3) The Marine may not leave until he has taken all the tests at the station.
  - 4) When he completes the testing, return the schedule and direct him to the next station at the assigned time.
- C. You are responsible for maintaining good test conditions at your station.
  - 1) You should not allow Marines not being tested to observe the test.

- 2) If a Marine does not cooperate, contact the Hands-on Test Manager or the senior Marine NCO.
- D. At the end of the session, review your scoresheets to be sure they are complete, put them in numerical order by ID, and give them to the Hands-on Test Manager in a folder.

#### **TEST OF ADMINISTRATIVE DUTIES**

In addition to the mechanical duties, a variety of administrative responsibilities are also assigned to U/AH-1 helicopter mechanics. These duties include the documentation of maintenance action performed, the use of technical manuals, and the ordering of parts from the supply system. These skills were also tested. Following are the tests administered to assess the administrative skills of U/AH-1 helicopter mechanics. Two forms of the test were produced.

Name: \_\_\_\_\_

SSN: \_\_\_\_\_

ID: \_\_\_\_\_

### Instructions

This is a test of your ability to work with manuals and to complete forms that helicopter mechanics use on the job. You can complete this test by using the materials available to you.

Follow these instructions:

1. Write your name (last, first, MI), Social Security Number, and the identification number assigned to you on the first morning of testing in the upper right corner.
2. When you turn this page you will find some scenarios that require the use of UH-1N Technical Manuals. Answer the questions using whatever manuals are necessary.
3. You will also find a partially completed Maintenance Action Form (MAF). Complete this MAF using the appropriate publications.
4. When you have finished both sections, please turn your packet in to your test administrator.
5. Please turn the page and begin.

Helicopter UH-1N

**UH-1N Manual Written Test (A)**

A. You are filling out a MAF. You cannot find a work unit code manual. What other manual could you use to find malfunction description codes? On what page do malfunction codes begin?

1. Tech Manual: \_\_\_\_\_

2. Page: \_\_\_\_\_

B. You are filling out the work unit code block of a MAF. What would be the work unit code for the main rotor hub assembly?

3. Answer: \_\_\_\_\_

4. Tech Manual: \_\_\_\_\_

5. Page: \_\_\_\_\_

C. What would be the type equipment code for a UH-1E aircraft?

6. Answer: \_\_\_\_\_

7. Tech Manual: \_\_\_\_\_

8. Page: \_\_\_\_\_

D. Your line supervisor hands you a MAF with a gripe that says, the windshield wipers do not clean the windshield properly. Where could you find the troubleshooting procedure for this problem?

9. Tech Manual: \_\_\_\_\_

10. Paragraph: \_\_\_\_\_

11. Page: \_\_\_\_\_

E. Your line supervisor wants you to find the order information for the shims for the scissor and sleeve assembly. Where would you find this information?

12. Tech Manual: \_\_\_\_\_

13. Page: \_\_\_\_\_

14. Figure: \_\_\_\_\_

15. Index: \_\_\_\_\_

16. Part No.: \_\_\_\_\_



Name: \_\_\_\_\_

SSN: \_\_\_\_\_

ID: \_\_\_\_\_

### Instructions

This is a test of your ability to work with manuals and to complete forms that helicopter mechanics use on the job. You can complete this test by using the materials available to you.

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1. Write your name (last, first, MI), Social Security Number, and the identification number assigned to you on the first morning of testing in the upper right corner.
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3. You will also find a partially completed Maintenance Action Form (MAF). Complete this MAF using the appropriate publications.
4. When you have finished both sections, please turn your packet in to your test administrator.
5. Please turn the page and begin.

Helicopter UH-1N

**UH-1N Manual Written Test (B)**

A. Your line supervisor wants you to find the order information for the shims for the scissor and sleeve assembly. Where would you find this information?

1. Tech Manual: \_\_\_\_\_
2. Page: \_\_\_\_\_
3. Figure: \_\_\_\_\_
4. Index: \_\_\_\_\_
5. Part No.: \_\_\_\_\_

B. Your line supervisor hands you a MAF with a gripe that says, the windshield wipers do not clean the windshield properly. Where could you find the troubleshooting procedure for this problem?

6. Tech Manual: \_\_\_\_\_
7. Paragraph: \_\_\_\_\_
8. Page: \_\_\_\_\_

C. You are going to refuel your aircraft. You are near a ground operated radar sight. How far away from the radar sight should the aircraft be positioned?

9. Answer: \_\_\_\_\_
10. Tech Manual: \_\_\_\_\_
11. Page: \_\_\_\_\_

D. You are filling out the work unit code block of a MAF. What would be the work unit code for the main rotor hub assembly?

12. Answer: \_\_\_\_\_
13. Tech Manual: \_\_\_\_\_
14. Page: \_\_\_\_\_

E. You are filling out a MAF. You cannot find a work unit code manual. What other manual could you use to find malfunction description codes? On what page do malfunction codes begin?

15. Tech Manual: \_\_\_\_\_
16. Page: \_\_\_\_\_



#### JOB KNOWLEDGE TEST

The job knowledge test (JKT) was developed to be parallel in test content to the hands-on test. That is, for each task tested in the hands-on format, the same task was tested in a paper-and-pencil format. The JKT items were based on performance and used extracts from manuals and other pictures to illustrate the task situation. The test was composed of 168 multiple-choice questions that required about an hour and a half to complete.

Although the JKT was pretested to identify poor items, a few items remained in the final version that had inadequate measurement properties. These items were deleted from further analysis. Several other items were ambiguous, so multiple response alternatives were considered correct. Table 1 notes the affected items and reports the correct response alternative for each item.

**Table 1. Answer Key for the U/AH-1 Job Knowledge Test**

|    | Correct<br>Item response |    | Correct<br>Item response |     | Correct<br>Item response |     | Correct<br>Item response |     | Correct<br>Item response |
|----|--------------------------|----|--------------------------|-----|--------------------------|-----|--------------------------|-----|--------------------------|
| 1  | D                        | 35 | D                        | 69  | D                        | 103 | C                        | 137 | A                        |
| 2  | A                        | 36 | A                        | 70  | B                        | 104 | C                        | 138 | B                        |
| 3  | A                        | 37 | D                        | 71  | A                        | 105 | A                        | 139 | C                        |
| 4  | A                        | 38 | D                        | 72  | C                        | 106 | B                        | 140 | B                        |
| 5  | C                        | 39 | A                        | 73  | C                        | 107 | C                        | 141 | B                        |
| 6  | C                        | 40 | C                        | 74  | C                        | 108 | C                        | 142 | B                        |
| 7  | C                        | 41 | C                        | 75  | A                        | 109 | B                        | 143 | B                        |
| 8  | B                        | 42 | C                        | 76  | A                        | 110 | C                        | 144 | D                        |
| 9  | C                        | 43 | A                        | 77  | C                        | 111 | C                        | 145 | A                        |
| 10 | D                        | 44 | D                        | 78  | B                        | 112 | C                        | 146 | B                        |
| 11 | B                        | 45 | B                        | 79  | C                        | 113 | B                        | 147 | C                        |
| 12 | A                        | 46 | B                        | 80  | B                        | 114 | A                        | 148 | A                        |
| 13 | A                        | 47 | C                        | 81  | B                        | 115 | A                        | 149 | D                        |
| 14 | D                        | 48 | D                        | 82  | A                        | 116 | dropped                  | 150 | B                        |
| 15 | C                        | 49 | C                        | 83  | D                        | 117 | C                        | 151 | A                        |
| 16 | C                        | 50 | D                        | 84  | C                        | 118 | A                        | 152 | B                        |
| 17 | D                        | 51 | A                        | 85  | A                        | 119 | A                        | 153 | C                        |
| 18 | B                        | 52 | D                        | 86  | B                        | 120 | A                        | 154 | D                        |
| 19 | D                        | 53 | A                        | 87  | B                        | 121 | B                        | 155 | C                        |
| 20 | D                        | 54 | C                        | 88  | A                        | 122 | B                        | 156 | D                        |
| 21 | A                        | 55 | A                        | 89  | D                        | 123 | B                        | 157 | B                        |
| 22 | A                        | 56 | A                        | 90  | B                        | 124 | dropped                  | 158 | B                        |
| 23 | B                        | 57 | C                        | 91  | B                        | 125 | A                        | 159 | B                        |
| 24 | A                        | 58 | C                        | 92  | D                        | 126 | B                        | 160 | B                        |
| 25 | C                        | 59 | C                        | 93  | A                        | 127 | A                        | 161 | dropped                  |
| 26 | C                        | 60 | B                        | 94  | C                        | 128 | D                        | 162 | B                        |
| 27 | D                        | 61 | C                        | 95  | B                        | 129 | D                        | 163 | B                        |
| 28 | B                        | 62 | B                        | 96  | D                        | 130 | D                        | 164 | C                        |
| 29 | A                        | 63 | D                        | 97  | C                        | 131 | C                        | 165 | C                        |
| 30 | C                        | 64 | A                        | 98  | D                        | 132 | C                        | 166 | A                        |
| 31 | A                        | 65 | D                        | 99  | C                        | 133 | B                        | 167 | B                        |
| 32 | A                        | 66 | A                        | 100 | B                        | 134 | A or B                   | 168 | B                        |
| 33 | B                        | 67 | A                        | 101 | D                        | 135 | D                        |     |                          |
| 34 | C                        | 68 | B                        | 102 | D                        | 136 | B                        |     |                          |

**U.S. Marine Corps**

**UH-1N/AH-1W**

**Job Knowledge Test**

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**30 April 1990**

**FORM A**

**KNOWLEDGE TEST: UH-1N/AH-1W (6114)**

**Directions**

Each item in this booklet consists of a question or statement followed by four answer choices. Only one of the choices correctly answers the question or completes the statement. Read each item. Decide which of the choices you think is correct and blacken the letter on your answer sheet that matches that letter and item number. Here is an example:

1. What game is played in  
the Superbowl?

- A. Baseball  
B. Basketball  
C. Football  
D. Volleyball

**SAMPLE ANSWER SHEET**

1.  A  B  C  D

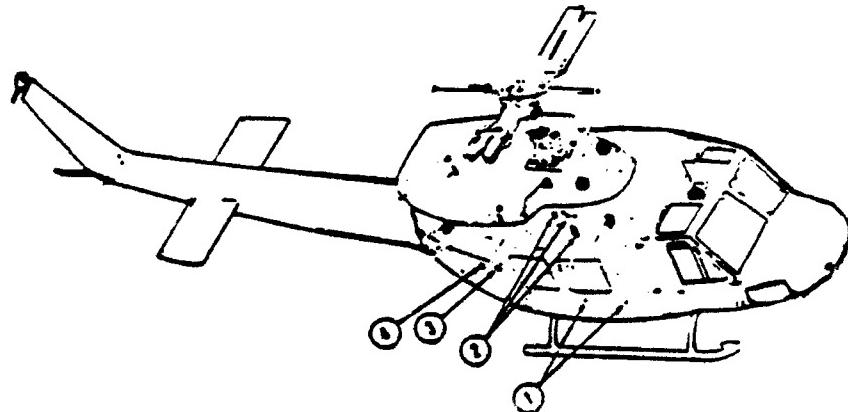
Since football is played in the Superbowl, the answer is C. On the SAMPLE ANSWER SHEET shown above, C has been filled in. Be sure to fill in only one letter for each item on your answer sheet.

Do not spend too much time on any one item. Try to answer every item. Even if you are not sure of your answer, make the best guess you can. Mark only one choice for each item, and be sure the item you mark on your answer sheet matches the item number in the booklet.

**AIRCRAFT: UH-1N/AH-1W (6114)**

For this portion of the test you may use the extract titled R/R Fuel Boost Pump (UH-1N).

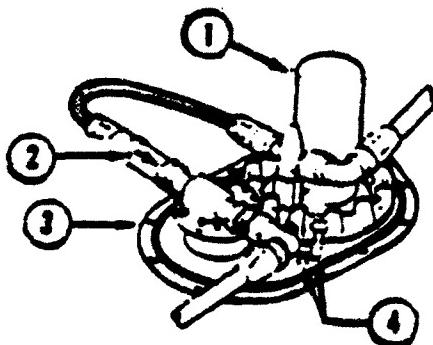
1. You are about to remove the fuel boost pump from the UH-1N. Which set of safety precautions is the most important?
  - A. Cranial and knee pads
  - B. Gloves and hearing protection
  - C. Fire retardant clothing and shoes
  - D. Eye protection and placing the aircraft in a well ventilated area
2. You are given a MAF by your supervisor to remove the fuel boost pump. Where should the fuel boost pump be located in the below diagram?



- A. 1
- B. 2
- C. 3
- D. 4

3. Which item represents the fuel boost pump in the diagram below?

- A. 1
- B. 2
- C. 3
- D. 4



4. After removing the sump access panel from the lower fuselage to gain access to the pump, you must

- A. drain the pump through the 2 drain valves.
- B. disconnect the electrical leads from the pump.
- C. remove the sump assembly and packings.
- D. remove bolts and washers around the edge of the sump plate.

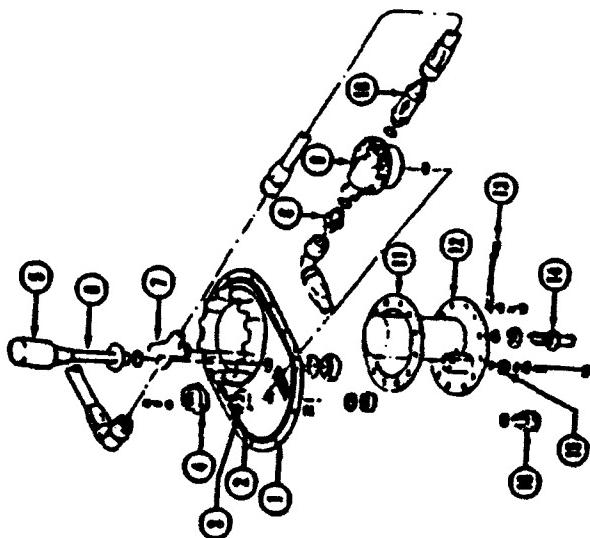
5. Before installing the new fuel pump, you must transfer the \_\_\_ and \_\_\_ to the replacement pump.

- |                        |                    |
|------------------------|--------------------|
| A. seal                | packing            |
| B. float               | switch             |
| C. drain valve         | seal drain adapter |
| D. fuel quantity probe | out board fitting  |

6. After attaching the grounding jumper on the center aft bolt, you must torque the bolts \_\_\_ to \_\_\_ inch-pounds.
- 30 - 50
  - 65 - 75
  - 50 - 70
  - 45 - 75
7. In what manual would you find procedures for defueling the UH-1N aircraft?
- NAVAIR 01-110HCE-2
  - NAVAIR 03-10-513
  - NAVAIR 01-1A-35
  - NAVAIR 01-115HC9-3
8. After connecting the seal drain tube to the adapter on the pump, you must
- torque the seal drain tube 125 - 150 inch-pounds.
  - perform operational check for leaks and proper operation.
  - disconnect battery and all external electrical power.
  - take a fuel sample.
9. You want to test the new fuel boost pump to find out if it works. You must
- connect the wires and apply power before installing the pump.
  - turn the pump with a screwdriver.
  - completely install the pump and then test it.
  - connect the wires and place the pump in a bucket of fuel to test it.

10. Why must you not operate the fuel boost pump without fuel in the fuel cell?
- A. You may get air in the fuel lines.
  - B. The pump will not run without fuel.
  - C. The pump will run too fast.
  - D. The pump may overheat and cause an explosion.

Refer to the figure below in answering the following 2 questions.



11. As you are removing the Fuel Boost Pump, your supervisor asks you to identify the Pump Outlet Plug. You show him that it is located at point
- A. 14
  - B. 15
  - C. 16
  - D. 17

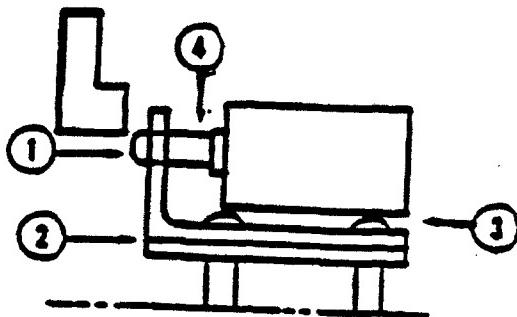
12. You are still removing the Fuel Boost Pump. Your supervisor asks you this time to identify the Seal Drain Adapter. You show him that it is located at point
- A. 14
  - B. 15
  - C. 16
  - D. 17

**AIRCRAFT: UH-1N/AH-1W (6114)**

For this portion of the test you may use the extract titled TS PP Control System (UH-1N).

13. In the figure, at which point would you make your clearance measurements on the Flight Idle Stop Solenoid?

- A. 1
- B. 2
- C. 3
- D. 4



14. There are a total of \_\_\_ Flight Idle Stop Solenoids on the UH-1N aircraft.

- A. 1
- B. 4
- C. 3
- D. 2

15. You are told to measure the clearance on the No. 1 Flight Idle Stop Solenoid. The correct measurement should be
- A. 0.020 inches.
  - B. 0.025 - 0.030 inches.
  - C. 0.003 - 0.015 inches.
  - D. 0.040 inches.
16. You are told by your supervisor to check clearance levels of the Flight Idle Stop Solenoid. You would find them located on the engine deck near the
- A. cabin forward bulkhead.
  - B. accessory gearbox.
  - C. cabin aft bulkhead.
  - D. fuel control.
17. What tool would you use to measure the clearance on the Flight Idle Stop Solenoids?
- A. protractor
  - B. micrometer
  - C. ruler
  - D. feeler gage

18. If you find that your clearance is incorrect on the flight idle stop solenoid, you should

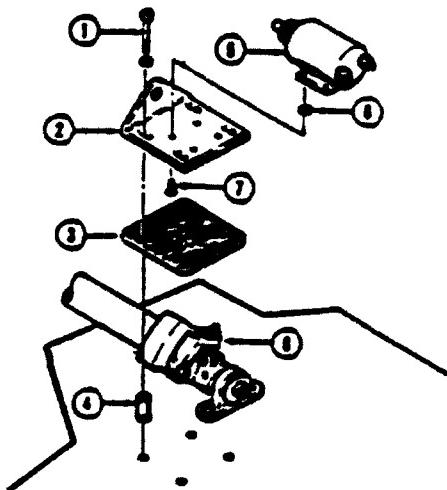
  - A. replace the old one with a new one.
  - B. adjust the position of the solenoid bracket on its base to obtain the correct clearance.
  - C. adjust the amount of plunger travel.
  - D. adjust the stop.
19. To gain access to the flight idle stop solenoid, you must

  - A. remove the engine in-take.
  - B. open the accessory gearbox access panel.
  - C. remove the engine lower cowl.
  - D. open the engine lower cowl.
20. To what torque should you set for the screws that secure the solenoid, bracket and base to the engine deck?

  - A. 30 to 40 inch-pounds
  - B. 60 to 80 inch-pounds
  - C. 50 inch-pounds
  - D. The manual does not state a specific torque value for the screws.

21. You are replacing the Flight Idle Stop Solenoid Assembly as depicted in the figure. You find that you are short an item in the assembly identified by the number 6 (in the figure). This replacement part is called

- A. a Laminated Shim.
- B. a Washer.
- C. a Spacer.
- D. Packing.



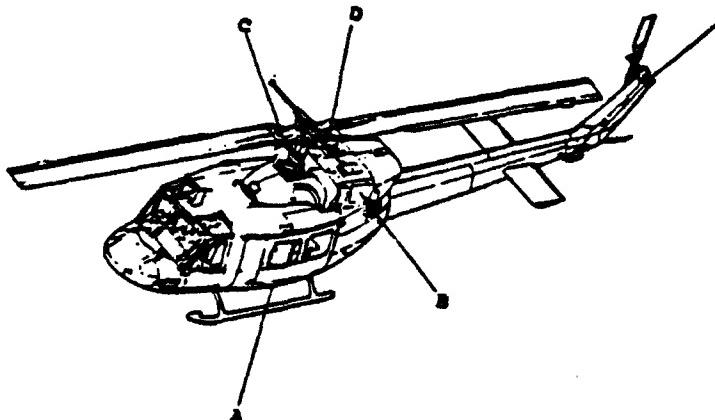
22. The best method of adjusting the Idle Stop Solenoid is to
- A. loosen the set screws and adjust the Solenoid by hand.
  - B. re-shim the entire Assembly.
  - C. loosen the set screws and tap the Assembly lightly with a rubber mallet.
  - D. loosen the set screws, engage the Flight Idle Stop while holding a Feeler Gage between the Stop and the Solenoid, then letting the Assembly adjust itself.

**AIRCRAFT: UH-1N/AH-1W (6114)**

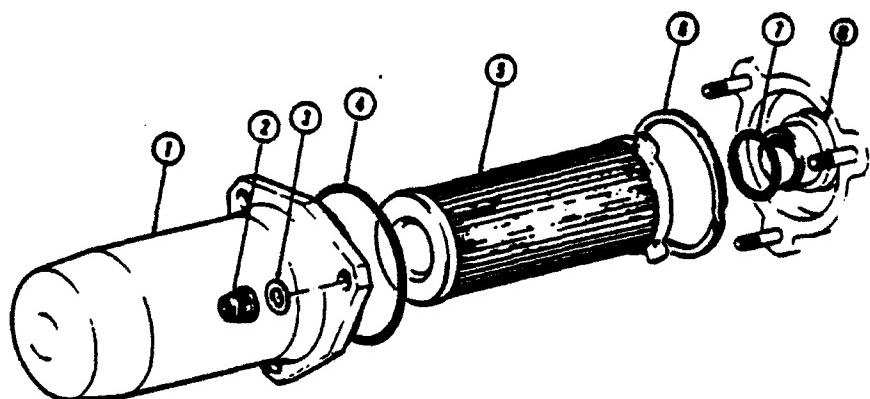
For this portion of the test you may use the extract titled TS Power Plant Oil System (UH-1N).

23. Where on this aircraft would you look to find the No.1 engine Oil Filter?

- A. A
- B. B
- C. C
- D. D



Refer to the figure below in answering the following 3 questions.



24. As you disassemble the No.1 Engine Oil Filter, your supervisor asks you to identify the different types of packing used in the filter. You show him that they are located at point(s)
- A. 4, 7
  - B. 3, 6
  - C. 3, 4, 6, 7
  - D. 1, 5
25. You are asked by your supervisor to identify the Retaining Ring. You point to
- A. 2
  - B. 4
  - C. 6
  - D. 7
26. As you clean the Oil Filter components, one component that you do clean is
- A. 1
  - B. 3
  - C. 5
  - D. 6

27. As you reassemble the Engine Oil Filter, you find that the Filter Element was reversed. With this reversed, the No.1 engine
- A. would still function normally.
  - B. oil system would not circulate properly.
  - C. would operate at only 98% power.
  - D. Oil Filter could not be reassembled. You cannot reverse the Filter Element, it is "Murphy" proof.
28. As you reassemble the Oil Filter, the retaining nuts must be
- A. torqued 20 to 30 inch-pounds.
  - B. torqued 30 to 40 inch-pounds.
  - C. torqued 20 to 30 foot-pounds.
  - D. hand tightened only.
29. As you inspect the Oil Filter, you notice a number of metal chips wedged in the Filter Element. You must next
- A. clean all filter components.
  - B. refer to Work Package 003 00.
  - C. take an oil sample.
  - D. change the oil.

30. Before replacing the Packing into the Oil Filter Assembly, you must

- A. ensure it has been wiped clean with a lint free rag.
- B. lubricate it with grease (A1-HHAIN-GAI-2)
- C. lubricate it with oil (MIL-L-23699)
- D. lubricate it with oil (DOD-L-85734(AS))

31. You are told to change all of the Gearbox Oil Filters on your aircraft. You know that there are \_\_\_ oil filters located on the rear side of the Reduction Gearbox, \_\_\_ for each power system and \_\_\_ for the Reduction Gearbox Oil System.

- |          |     |     |
|----------|-----|-----|
| A. three | one | one |
| B. four  | one | two |
| C. five  | two | one |
| D. six   | two | two |

32. What is the best method of performing a functional check of the Oil Filter?

- A. visual inspection
- B. wet run, followed by an inspection
- C. power section start
- D. run the engine

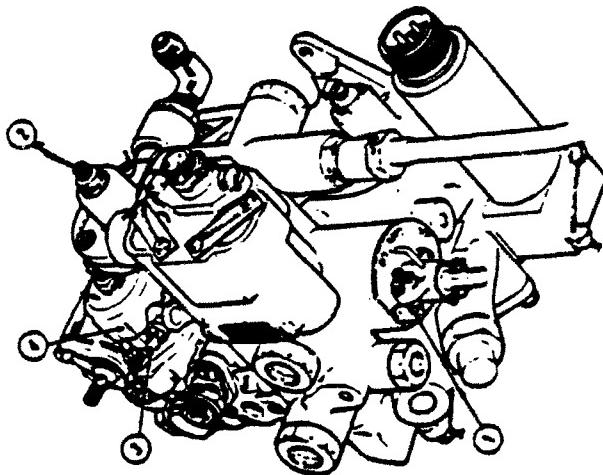
**AIRCRAFT: UH-1N/AH-1W (6114)**

For this portion of the test you may use the extract titled TS PP Fuel System (UH-1N).

33. As you troubleshoot the fuel control system, you should check that the lower ends of the control tubes are attached in the center holes of the
  - A. manual fuel control unit.
  - B. levers on the jackshaft.
  - C. automatic fuel control unit.
  - D. elevator control linkages.
34. Before you rig the Power Lever Control System, you must ensure that
  - A. the inboard side of the torque tube lever is supported with a bucking bar or equivalent.
  - B. you have 0.015 inch clearance between the plunger and the face of the stop.
  - C. the throttle control grips on the collective sticks are properly interconnected.
  - D. all control tubes are rigged properly.
35. As you adjust the right-hand fuel control arm, the lever should be positioned
  - A. forward and 15 degrees clockwise from the center-line of the stop arm.
  - B. aft and 15 degrees counter clockwise from the center-line of the stop arm.
  - C. centered and 15 degrees from the center-line of the stop arm.
  - D. aft and 15 degrees clock-wise from the center-line of the stop arm.

36. If binding or malfunction occurs in the control stick and jackshaft assembly, you must
- check the gear sectors for proper engagement and backlash.
  - check for 4 to 6 degrees of over travel in the throttle grips.
  - move the end of the tube to the next hole nearer to the jackshaft.
  - check each rod-end and joint of linkage for security.
37. You are adjusting the clearance on the Manual Fuel Control Maximum Stop. The clearance you set should be
- 0.040 to 0.050 inches.
  - 0.200 to 0.300 inches.
  - 0.020 to 0.030 inches.
  - 0.030 to 0.040 inches.
38. When you set the Manual Fuel Control Lever at its minimum stop position, the pointer should be at
- 10 degrees.
  - 90 degrees.
  - 2 degrees.
  - 0 degrees.

**Refer to the figure below in answering the following 2 questions.**



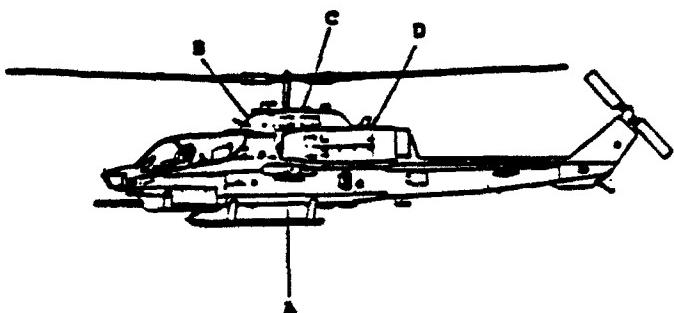
39. You are preparing to make an adjustment to the fuel control stop. Where would you make the adjustment on the figure?
- A. 1
  - B. 2
  - C. 3
  - D. 4
40. You are going to adjust the Manual/Automatic Interconnect Linkage. It is identified in the figure as point
- A. 1
  - B. 2
  - C. 3
  - D. 4

**AIRCRAFT: UH-1N/AH-1W (6114)**

For this portion of the test you may use the extract titled TS Power Train Chip Detectors (AH-1W).

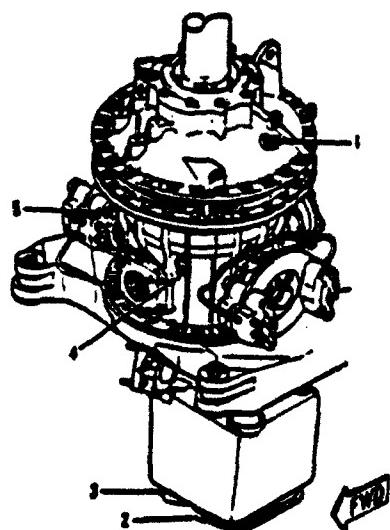
41. If you were to work on the Transmission Oil Chip Detectors, you would find them located nearest to

- A. A
- B. B
- C. C
- D. D



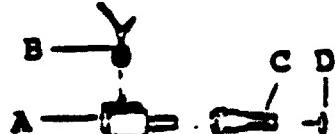
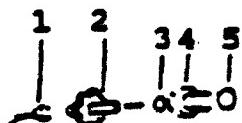
42. If you were to work on the Mast Bearing Chip Detector(s), you would find it (them) at point(s).

- A. 2, 3
- B. 4, 5
- C. 1
- D. 4



43. The figure(s) below represent an exploded view of two different types of Chip Detector Assemblies, you must identify both the Chip Detector and the Self-Closing Valve.

- A. 2, 4, A, C
- B. 1, 2, A, B
- C. 2, 5, A, D
- D. 4, 5, C, D



**44. When you remove the Chip Detector**

- A. both the detector and the self-closing valve must be turned 90 degrees before being removed from the transmission.**
- B. only the detector should be turned 90 degrees before being removed from the transmission.**
- C. the detector must be pulled straight out of the self-closing valve.**
- D. the detector is pushed in and rotated before being withdrawn from the self-closing valve.**

**45. When you have to clean the Chip Detector, the best method is to**

- A. use only compressed air.**
- B. use dry-cleaning solvent.**
- C. use clean oil and rags.**
- D. shake over a white rag.**

**46. When you are troubleshooting the Right Side Planetary Chip Detector, what must you do to the Electrical Connector attached to the detector?**

- A. Cut its power by pulling the circuit breaker.**
- B. Disconnect it from the detector.**
- C. Leave it attached to the detector assembly.**
- D. Have it removed by the avionics section.**

47. After you have inserted the Self-Closing Valve into the transmission, it should be
- A. torqued to 125 to 145 pound-inches.
  - B. torqued to 105 to 115 pound-inches.
  - C. torqued to 150 to 200 pound-inches.
  - D. lightly wrench tightened only.
48. As you are inserting the Chip Detector into the Self-Closing Valve, you must
- A. push the detector straight in until an audible click is heard.
  - B. be sure to latch both clips on opposite ends of the detector over the lip of the strainer.
  - C. ensure the pin in the detector must lock into the bayonet slot on the strainer.
  - D. insert the detector into the Self-Closing Valve and turn it clockwise as far as it will go.
49. After you have installed the Chip Detector,
- A. close and secure the work platform.
  - B. call for a QA.
  - C. attach the electrical connector to the chip detector.
  - D. check to see if the Chip Light Warning is off.

50. There are \_\_\_ Chip Detectors located in the Transmission.

- A. two
- B. three
- C. four
- D. five

51. Your supervisor told you to replace one of the Sump Chip Detector Assemblies. Your first step must be to

- A. drain the Transmission.
- B. power down the aircraft.
- C. take an Oil Sample from the Transmission Sump.
- D. check the Chip Detector Warning Light in the cockpit to see if it is on.

52. Your supervisor has told you to remove all of the Transmission Chip Detectors for cleaning. He also told you to mark each Chip Detector and Self-Closing Valve. He said this because

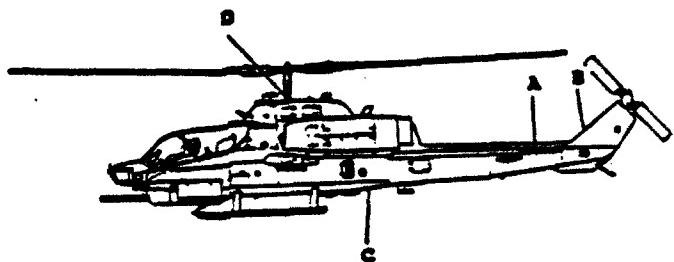
- A. he likes to make you work.
- B. he is afraid that the components may get lost or stolen by another air crew.
- C. perfection is essential when working on Marine Helicopters.
- D. Detectors and Valves vary in size and length.

**AIRCRAFT: UH-1N/AH-1W (6114)**

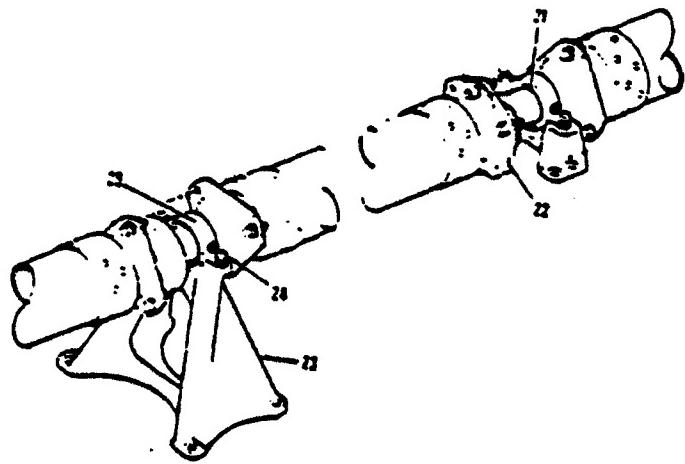
For this portion of the test you may use the extract titled R/R Power Train Drive Shaft (AH-1W).

53. Where on this aircraft would you look to find No. 5 Drive Shaft?

- A. A
- B. B
- C. C
- D. D



Refer to the figure below in answering the following 2 questions.



54. Before you begin to disassemble the Drive Shaft, your supervisor asks you to identify the Disc Assembly. You show him that it is located at point(s)
- A. 25
  - B. 21
  - C. 22
  - D. 24 & 25
55. You are asked to identify the Hanger Bearing Housing. You point to
- A. 25
  - B. 23
  - C. 21
  - D. 22
56. As you break torque on the nuts connecting the Disc Assembly to the Drive Shaft, one tool that you never use is a
- A. torque wrench.
  - B. ratchet.
  - C. wrench.
  - D. ratchet with an extension.

57. When you install the Disc Assembly to shaft No.5, the order that you place the washers
- A. does not matter.
  - B. does not matter, if both solid and hollow bolts are used at each Disc Assembly.
  - C. requires radiused steel washers to be placed on either side of the Disc Assembly.
  - D. requires the thin steel washers to be placed on either side of the Disc Assembly.
58. The final torque that you place on the nuts connecting the aft end of the Drive Shaft to the Disc Assembly must be \_\_\_ to \_\_\_.
- A. 120 to 160 inch-pounds
  - B. 31 to 45 foot-pounds
  - C. 280 to 300 inch-pounds
  - D. 50 to 70 inch-pounds
59. You have removed all 3 bolts, nuts, and washers at each end of Box Drive Shaft No. 5. As you attempt to lift it away from the aircraft you find that the shaft will not move. The next best action you should take is to
- A. compress the shaft so that there will be sufficient clearance to lift it free from the Disc Assembly.
  - B. disconnect the Flange from the Tail Rotor Drive Shaft.
  - C. remove the Disc Assembly from the aft end of the shaft.
  - D. remove both Flanges at the ends of the shaft.

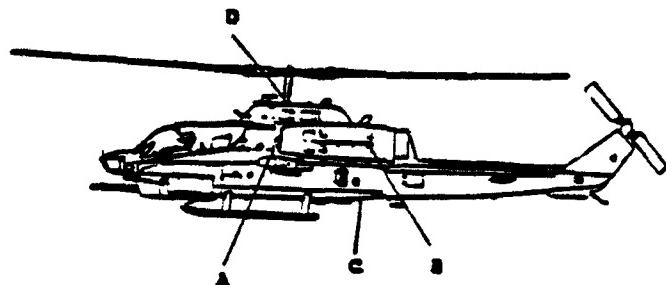
60. When you paint torque strips, they must be painted
- A. across the bolt head, washer, and adjacent surface.
  - B. from the base of the nut and adjacent surface, across to the end of the bolt.
  - C. on every other opposing nut.
  - D. on the edge of the Disc Assembly.
61. When you install a Drive Shaft and Disc Assembly, all washers should be
- A. new. Replace all the old washers.
  - B. exchanged for double beveled washers.
  - C. replaced in the same order they were removed.
  - D. coated with oil before being reassembled and torqued.
62. The Fireshield Plate
- A. is installed at the aft end of each drive shaft segment.
  - B. is not a component in the Drive Shaft Assembly.
  - C. is installed at the aft end of drive shaft No. 5.
  - D. is installed at the aft end of drive shaft No. 1.
63. As you remove the No. 5 Drive Shaft, it is important not to disturb the \_\_\_ on the \_\_\_, otherwise a misalignment of the shaft may occur.
- A. Hanger Assembly                      Support Fitting
  - B. Hanger Bearing Housing      Drive Shaft
  - C. Fireshield Plate                      Intermediate Gearbox
  - D. Shims                                 Support Fitting

64. You have removed the No. 5 Drive Shaft and are inspecting it. You notice a large scratch on the surface of the shaft. The best advice for you to use to measure this scratch, is a
- Optical Micrometer.
  - Feeler Gage.
  - Steel Pin Measure.
  - Inside Micrometer.
65. As you are removing the No. 5 Drive Shaft and Disc Assembly, you drop the Disc Assembly. It was not lockwired and the discs scattered all over the floor of the hanger. You must next
- go on leave.
  - just pick up the discs, brush off the dirt and put them back on the Drive Shaft.
  - call for assistance.
  - pick up the discs and inspect for buckling, corrosion, or fretting at the bolt holes.
66. You must reassemble the Disc Assembly. The discs
- must be stacked so that the indexed holes in each disc alternate 60 degrees in a counter clockwise direction from the adjacent disc.
  - must fit flat with no bulges.
  - are simply stacked together.
  - must be alternated against the grain. There is no set degree of alternation.

**AIRCRAFT: UH-1N/AH-1W (6114)**

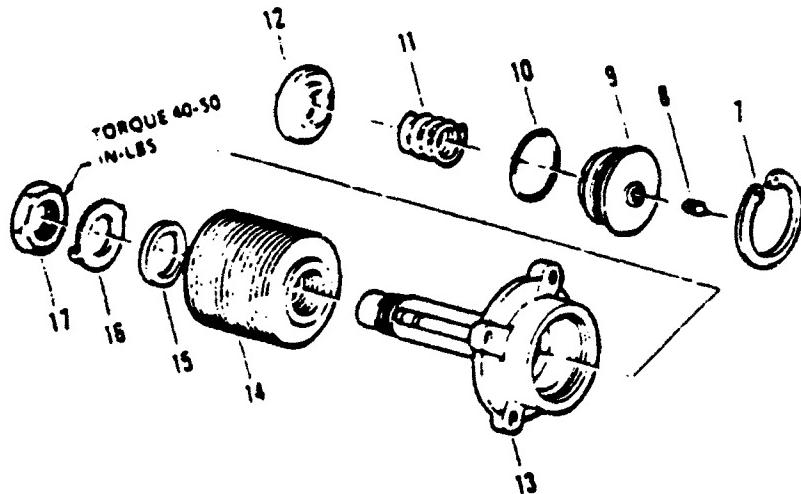
For this portion of the test you may use the extract titled R/R Power Train Oil Filter (AH-1W).

67. Where on this aircraft would you look to find the Sump Oil Filter?



- A. A
- B. B
- C. C
- D. D

68. As you disassemble the Sump Oil Filter, your supervisor asks you to identify the packing used in the filter. You show him that it is located at point



- A. 9
  - B. 10
  - C. 12
  - D. 14
69. You are asked by your supervisor to identify the Locknut Washer. You point to
- A. 7
  - B. 12
  - C. 15
  - D. 16

70. As you clean the Oil Filter components, one component that you do not clean is
- A. 9
  - B. 10
  - C. 11
  - D. 14
71. As you reassemble the Sump Oil Filter, you must
- A. be sure that discs and spacers are alternated, with a spacer at each end of the stack.
  - B. be sure that discs and spacers are alternated, with a disc at each end of the stack.
  - C. be sure that discs and spacers are alternated, the order does not matter.
  - D. be sure that discs and spacers are alternated, with a disc at one end of the stack and a spacer at the other end.
72. As you reassemble the Sump Oil Filter, the retaining nut must be
- A. torqued to 20 inch-pounds.
  - B. torqued to 50-70 inch-pounds
  - C. torqued to 40-50 inch-pounds
  - D. lightly tightened only.

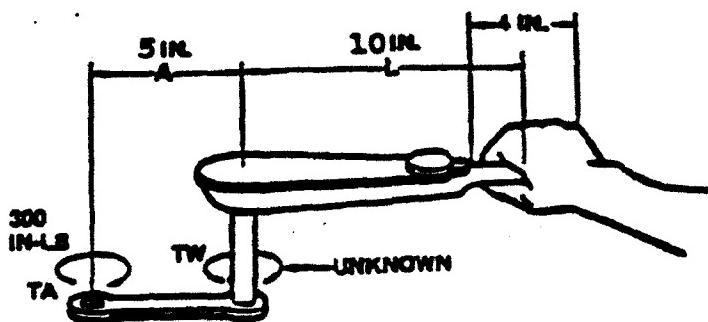
73. The final torque that you place on the Sump Oil Filter Housing nuts must be between \_\_\_ and \_\_\_.
- A. 90 and 100 pound-feet
  - B. 150 and 160 pound-feet
  - C. 50 and 70 pound-inches
  - D. 40 and 50 pound-inches
74. When you clean the components of the Sump Oil Filter, you must
- A. use only a clean lint free rag.
  - B. use nothing. Oil Filter components do not require cleaning.
  - C. use dry cleaning solvent.
  - D. lightly wipe all components using a lint free cloth and grease (NAVAIR 01-H1AAC-GAI-000).
75. As you inspect the Sump Oil Filter, you notice a number metal chips wedged in between the Discs. You must next
- A. replace if unable to clean.
  - B. refer to Work Package 003 00.
  - C. take an oil sample.
  - D. change the oil.

**AIRCRAFT: (All)**

**General**

76. You are inspecting an aircraft when you notice a white or gray powder deposit, similar to dust, in blotches on the surface. What type of corrosion do you suspect?
- A. pitting corrosion
  - B. intergranular corrosion
  - C. exfoliation corrosion
  - D. filiform corrosion

77. Using the formula and diagram below, the indicated torque should be



FORMULA TO OBTAIN CORRECT INDICATED  
TORQUE VALUE WHEN USING  
NONCONCENTRIC ATTACHMENT.

$$TW = \frac{(TA) \times (L)}{(L) + (A)}$$

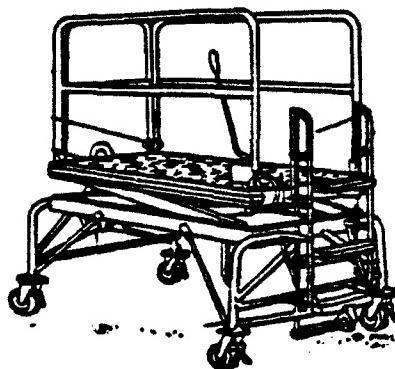
TW = INDICATED TORQUE VALUE ON  
TORQUE WRENCH  
TA = ACTUAL TORQUE VALUE APPLIED  
TO FASTENER  
L = LEVER LENGTH  
A = ATTACHMENT LENGTH

- A. 26.7 inch-pounds.
- B. 30 inch-pounds.
- C. 200 inch-pounds.
- D. 300 inch-pounds.

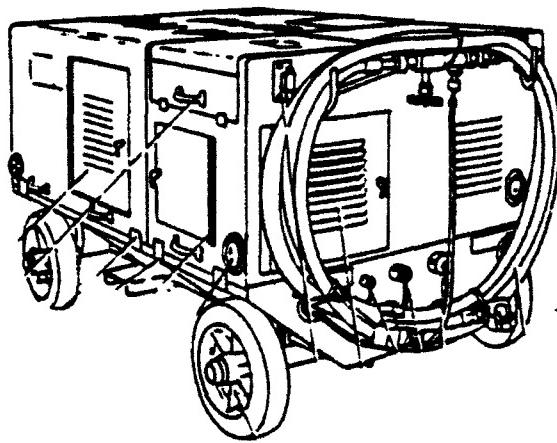
78. You have to torque a nut that has a torque value of 800 - 1000 pound-inches. What torque range would you use if you used a 150 pound-feet torque wrench?
- A. 400 - 500 pound-foot
  - B. 67 - 83 pound-foot
  - C. 100 - 150 pound-foot
  - D. 3 - 45 pound-foot
79. Who is authorized to witness torques on maintenance done on aircrafts?
- A. You can witness your own torque.
  - B. The mechanic working with you.
  - C. A CDI/QAR.
  - D. A torque specialist.
80. You drop a torque wrench while replacing the rotating scissors. You should
- A. reset it and torque nut to correct specification.
  - B. fill out a broken tool report and turn it in to be re-calibrated.
  - C. pick it up and continue.
  - D. inspect for damage and replace if necessary.

81. The piece of equipment in the figure is a

- A. elephant stand.
- B. B-4 work stand.
- C. C-3 work stand.
- D. blade stand.



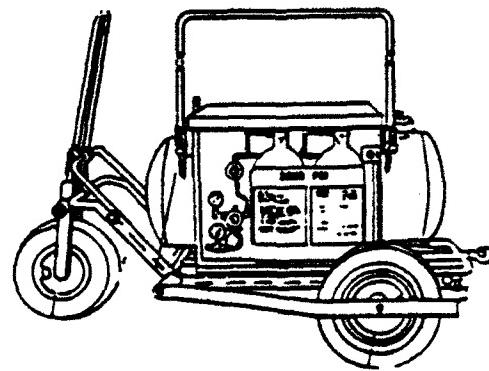
82. The piece of equipment in the figure is a



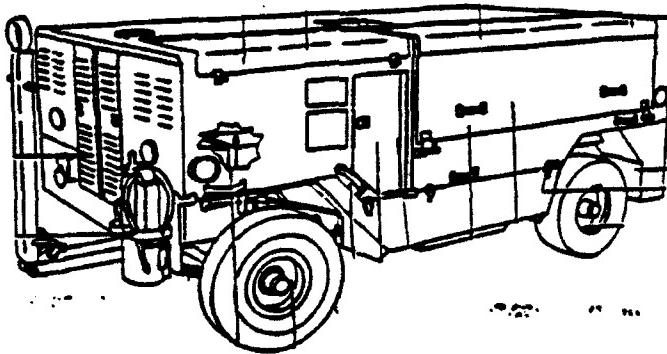
- A. hydraulic test stand.
- B. mobile electric power plant.
- C. jet engine corrosion control cart.
- D. mobile air conditioner unit.

83. You would use the piece of equipment in the figure to

- A. inflate aircraft tires.
- B. start aircraft engines.
- C. pressurize pneumatic accumulators.
- D. wash aircraft engines.



84. You would use the piece of equipment in the figure for

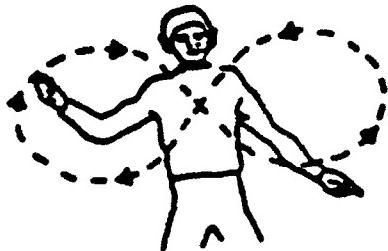


- A. supplying hydraulic power to the aircraft.
- B. supplying heat for pre-heating the engines.
- C. supplying electrical power to the aircraft.
- D. water washing the aircraft engines.

85. You are towing an aircraft into the hanger when you hear a whistle blow. You should immediately
- A. stop towing the aircraft.
  - B. figure out who blew the whistle and why.
  - C. wait for another whistle to blow.
  - D. slow down.
86. When driving a tow tractor or towing an aircraft on the flight line, you should never exceed
- A. 10 mph.
  - B. 5 mph.
  - C. 25 mph.
  - D. 3 mph.
87. The purpose of wing walkers during the movement of aircraft is to
- A. hold the wings in place during movement.
  - B. ensure sufficient clearing of the aircraft and rotor blade during movement.
  - C. give taxi directions during aircraft movement.
  - D. ensure no one walks under the rotor blades.

88. The Marine in the figure is giving the hand and arm signal for

- A. fire.
- B. start rotors.
- C. turn aircraft around.
- D. remove chocks.



89. When ground taxi directing at night, one of your most important items would be a

- A. flashlight.
- B. strobe light.
- C. flare.
- D. taxi wand.

90. You are preparing to fuel an aircraft. Your first step should be to

- A. open the fuel filler cap on the aircraft.
- B. ground the aircraft.
- C. open the fuel vent valve.
- D. turn the battery power on so you can read the gages.

91. You are taking fuel samples on an aircraft and find water in the sample. You should

- A. continue to take samples until there is only small traces of water in the sample.
- B. continue to take samples until there is no water in the sample.
- C. continue, because water is allowed to be in the sample.
- D. add a fuel additive to absorb the water in the fuel.

92. Safety is the responsibility of

- A. the safety officer.
- B. the Marine doing the job.
- C. maintenance control.
- D. the entire maintenance department.

93. Your aircraft has just been brought into the hanger for maintenance. You should ensure that the

- A. aircraft has a drip pan and is grounded.
- B. aircraft has a drip pan, and fuel samples are taken.
- C. battery switch is off and doors are closed.
- D. battery is connected and wheels are chocked.

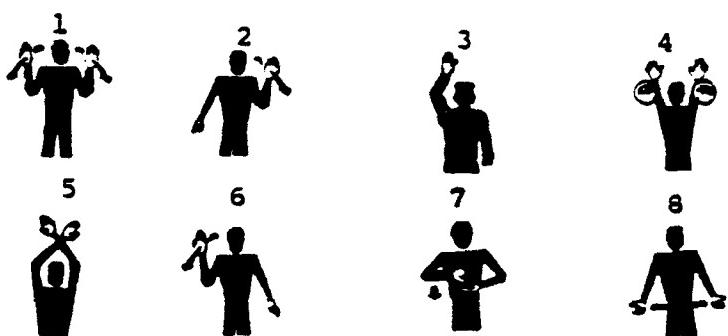
94. You are replacing an engine in an aircraft when you discover a missing tool. You should
- A. continue with the job and find it after the job is finished.
  - B. not worry about it, the tool room has replacement tools.
  - C. stop work, notify the shop supervisor, maintenance control, and QA.
  - D. write up a missing tool report and continue.
95. You have just completed morning FOD walk down. What form would you use to account for the time you spend on FOD walk?
- A. VIDS/MAF form
  - B. SAF card
  - C. FOD prevention form
  - D. SRC card
96. Who is authorized to issue Job Control Numbers for VIDS/MAFS?
- A. The person who writes up the gripe
  - B. Your work center supervisor
  - C. Quality Assurance
  - D. Maintenance Control
97. What type of manual would you use to find malfunction description codes?
- A. Malfunction description code manual
  - B. Illustrated parts breakdown manual
  - C. Work unit code manual
  - D. Job information manual

98. All of the following are types of maintenance requirement card decks (MRC's) except
- A. daily/servicing/special cards.
  - B. turnaround cards.
  - C. phased cards.
  - D. SRC cards.
99. When a VIDS/MAF is completed, what part shall be placed in a temporary file for later verification of the daily audit reports?
- A. 1
  - B. 3
  - C. 5
  - D. 4
100. If you could not find a work unit code manual and needed a listing of transaction codes, you could also find them in the
- A. OPNAVINST 4790.2F.
  - B. OPNAVINST 4790.2E.
  - C. OPNAVINST 4790.2C.
  - D. OPNAVINST 4790.2D.

101. The form in the figure is a

- A. work request form.
  - B. equipment history record form.
  - C. (MAF) Maintenance Action Form.
  - D. (SAF) Support Action Form.

**Refer to the figure below to answer the following 4 questions.**



102. You are ready to taxi your aircraft. What hand and arm signal should you give to remove the chocks?
- A. 3
  - B. 6
  - C. 4
  - D. 8
103. You are directing an aircraft into a parking spot. What signal should you give to make the aircraft stop?
- A. 1
  - B. 3
  - C. 5
  - D. 7
104. You are towing an aircraft. The taxi director wants you to turn to the right. He should signal
- A. 2
  - B. 4
  - C. 6
  - D. 8

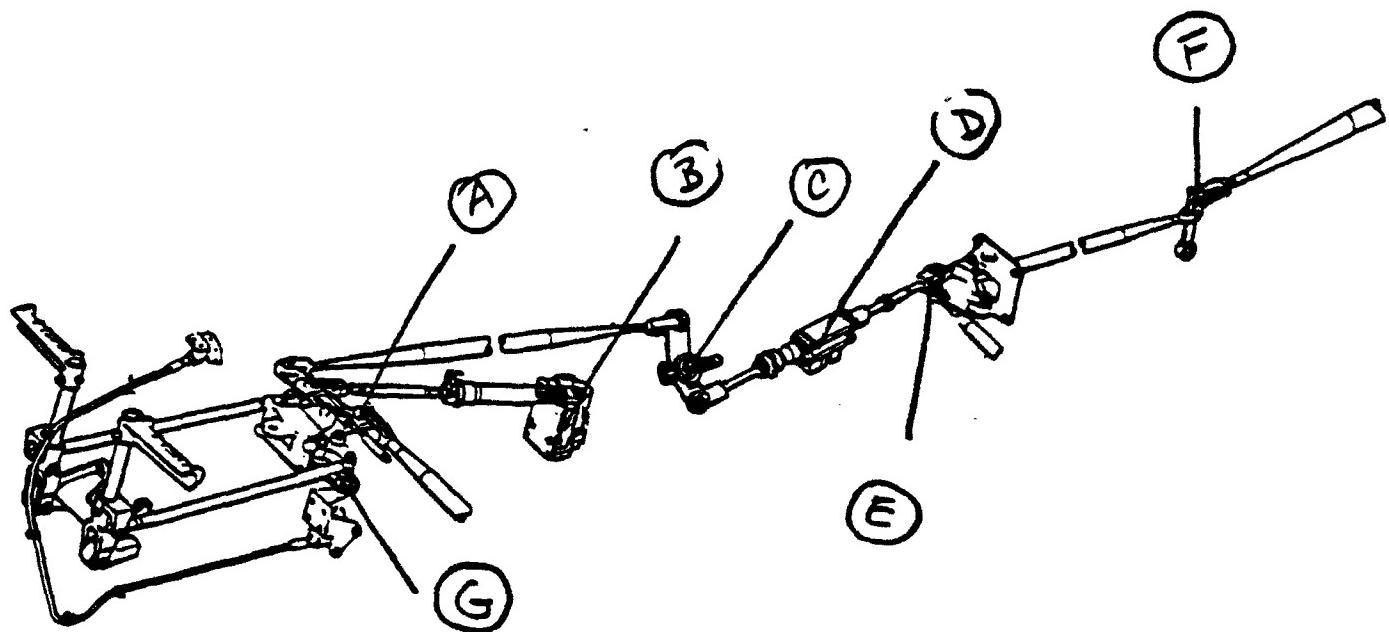
105. You are the taxi director. You want the aircraft to move straight ahead. You should signal

- A. 1
- B. 2
- C. 3
- D. 4

**AIRCRAFT: UH-1N/AH-1W (6114)**

For this portion of the test you may use the extract titled TS Flight Controls (UH-1N).

Refer to the figure below in answering the following 3 questions.



106. You must inspect the rotary actuator for security. You should check

- A. A
- B. B
- C. C
- D. D

107. You must inspect the servo actuator for serviceability. You should check

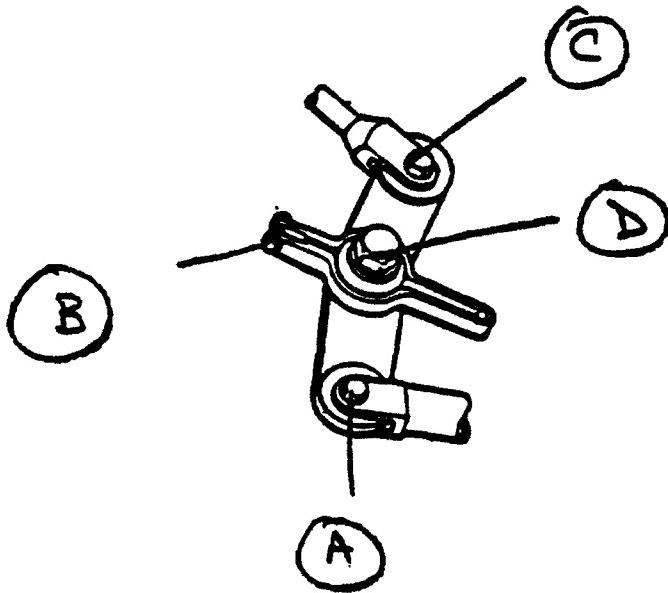
- A. B
- B. C
- C. D
- D. F

108. Letter F is a

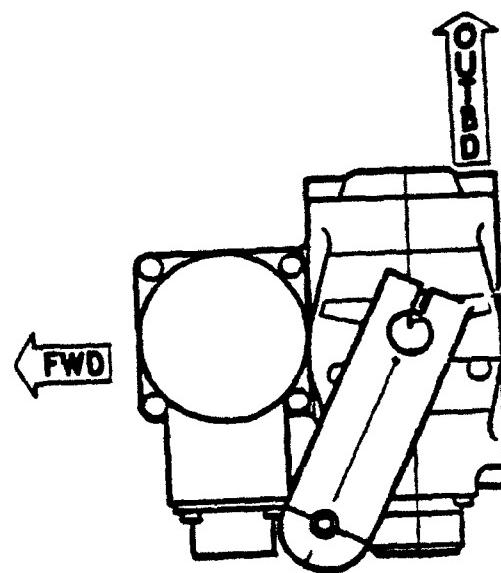
- A. crosshead.
- B. link.
- C. lever.
- D. force gradient.

109. You must adjust the function clamp. You should adjust

- A. A
- B. B
- C. C
- D. D



110. Below is a diagram of a rotary actuator. What position is the shaft?



- A. Full Forward
- B. Full Rear
- C. Center of Travel
- D. Slightly less than Full Forward

111. You must rig the tail rotor system force trim. The rotary actuator arm is in its proper position. Your next step is to hold the pilot pedals in

- A. full left pedal.
- B. full right pedal.
- C. neutral.
- D. any position.

112. You must rig the tail rotor system force trim. After measuring total travel of the rotary actuator arm, it should be placed at

- A. the forward end.
- B. the aft end.
- C. the midpoint.
- D. any point along the axis.

113. You are preparing to adjust tail rotor minimum friction. What position should the servo actuator be in?

- A. fully extended and locked.
- B. centered and locked.
- C. retracted and unlocked.
- D. centered and unlocked.

114. You are to adjust the tail rotor minimum friction. What tool should you use to measure the force of 4.25 to 4.75 pounds at the pedals?

- A. push/pull gage
- B. micrometer
- C. vernier scale
- D. dial indicator

**AIRCRAFT: UH-1N/AH-1W (6114)**

**R/R Pedal Adjuster (AH-1W)**

You must repair loose bonding of the boot and retainer. Refer to the TM extract to answer the following question.

**19. Repair Loose Bonding of Boot and Retainer.**

**WARNING**

Before using naphtha, extinguish all open flames and turn off electrical equipment. Vapors are highly flammable. Avoid prolonged breathing of vapors and repeated skin contact. Use in a well-ventilated area.

- a. Clean surfaces to be bonded with No. 400 grit abrasive cloth P-C-451. Remove sanding residue with a cleaning cloth MIL-C-85043 dampened with naphtha TT-N-85.
- b. Apply a thin, even coat of adhesive EC1300L to both surfaces and allow to dry to a tacky stage. If more than one coat is required, allow 10 minutes drying time between coats.
- c. Align parts and press firmly together. Allow cement to cure for 4 hours minimum at 70 - 95°F (21 - 35°C). Maintain contact pressure during cure cycle.

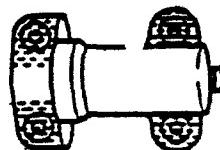
**115. Assume one coat is required to bond the boot to the retainer. What should you do after applying adhesive to the retainer?**

- A. Allow to dry to tacky stage
- B. Align parts and press firmly together
- C. Remove residue with cleaning cloth
- D. apply coat of adhesive to boot

116. Below is a picture of a clevis. Where should the solid film lubricant be?

- 
- The diagram shows a clevis joint consisting of two U-shaped pins and a cross pin. There are four options labeled A, B, C, and D, each showing a different way to apply a solid film lubricant to the contact surfaces.
- A. Lubricant applied to the top surface of the cross pin and the bottom surface of the U-pins.
  - B. Lubricant applied to the bottom surface of the cross pin and the top surface of the U-pins.
  - C. Lubricant applied to the top surface of the cross pin and the top surface of the U-pins.
  - D. Lubricant applied to the bottom surface of the cross pin and the bottom surface of the U-pins.

117. You must remove corrosion on the adjuster support. Upon completion, what is the maximum allowable tolerance for area B?



| TYPE OF DAMAGE                                | DAMAGE AREA SYMBOLS                 |                        |                        |
|---|-------------------------------------|------------------------|------------------------|
|   |                                     |                        |                        |
| MECHANICAL                                    | 0.005 IN.                           | 0.018 IN.              | 0.030 IN.              |
| CORROSION:<br>BEFORE CLEANUP<br>AFTER CLEANUP | 0.002 IN.<br>0.005 IN.              | 0.007 IN.<br>0.018 IN. | 0.015 IN.<br>0.030 IN. |
| MAXIMUM AREA PER<br>FULL DEPTH REPAIR         | 0.1 SQ. IN.                         | 0.8 SQ. IN.            | 1.0 SQ. IN.            |
| NUMBER OF REPAIRS                             | ONE PER<br>AREA                     | ONE PER<br>AREA        | ONE PER<br>AREA        |
| EDGE CHAMFER                                  | 0.02 IN.                            | 0.04 IN.               | 0.06 IN.               |
| BORES   | 0.002 IN. MAX FOR 1/4 CIRCUMFERENCE |                        |                        |
| THREADS:<br>DEPTH<br>LENGTH<br>NUMBER         | 0.008 IN.<br>1/4 THREAD<br>THREE    |                        |                        |

- A. 0.005 inch
- B. 0.007 inch
- C. 0.015 inch
- D. 0.002 inch

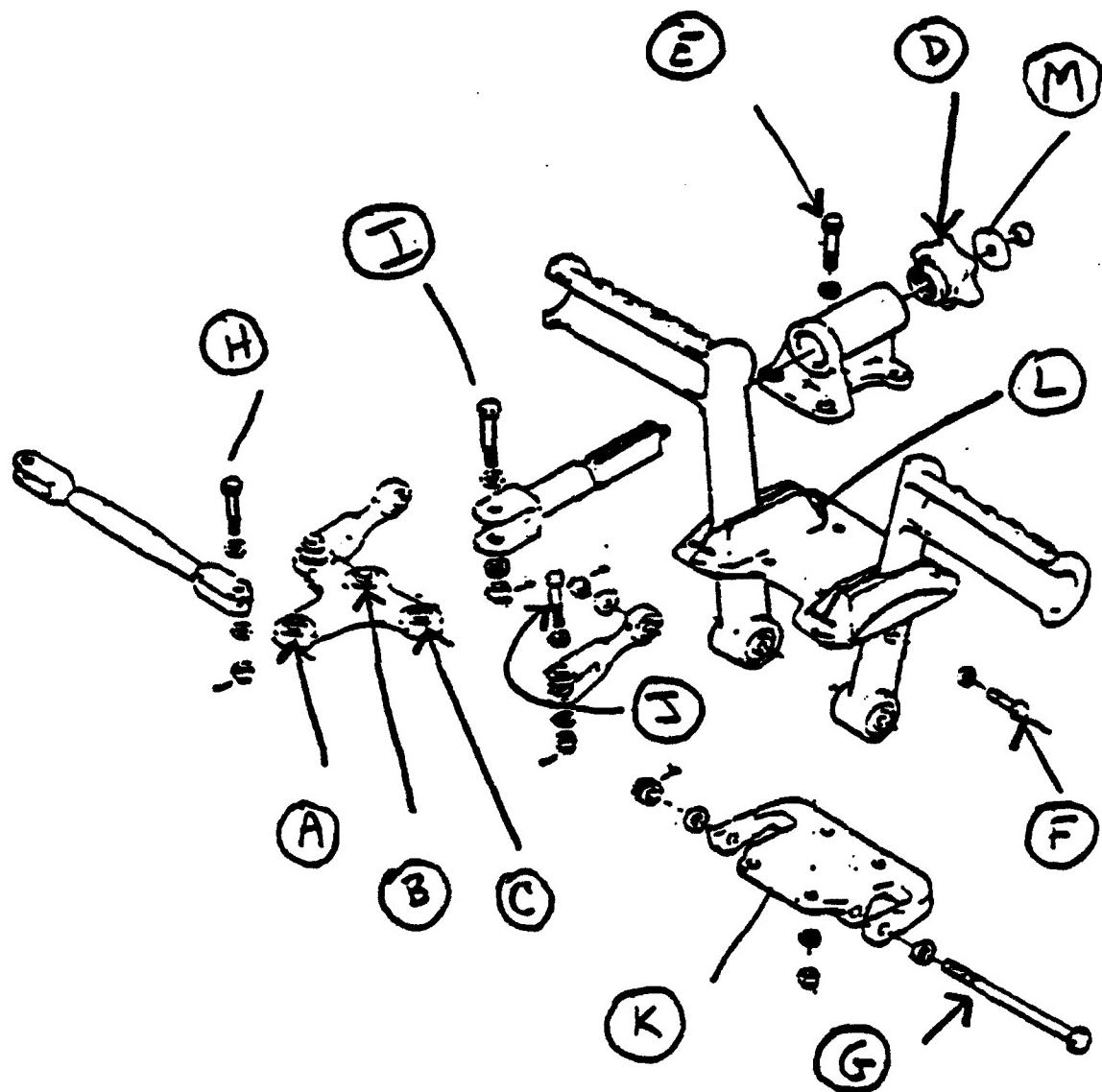
118. You must remove the gunners pedals. How many links must you disconnect?

- A. 2
- B. 1
- C. 4
- D. 6

119. You have removed the pedal adjuster. You should clean parts thoroughly with

- A. dry cleaning solvent P-D-680, Type II.
- B. anti-seize compound.
- C. epoxy polyamide primer coating MIL-P-23377.
- D. No. 400 or finer grit abrasive cloth.

Refer to the figure below in answering the following 9 questions.



120. You should disconnect the control tube from the bellcrank by removing bolt

- A. H
- B. I
- C. J
- D. E

121. You should remove the pedals from the pedals support by removing

- A. component K.
- B. bolt G.
- C. bolt F.
- D. component L.

122. How many bolts must be removed when replacing the pedals support from below the floor?

- A. 2
- B. 4
- C. 3
- D. 1

123. You should disconnect the bellcrank from the pedal adjuster clevis by removing

- A. bolt H.
- B. bolt I.
- C. bolt E.
- D. bolt G.

124. You must remove the bellcrank. How many links must be disconnected?

- A. 1
- B. 2
- C. 3
- D. 4

125. You are removing the clevis from the support. You should

- A. hold knob and remove nut and washer.
- B. turn knob counter clockwise to end and then remove nut and washer.
- C. turn knob clockwise to end and then remove nut and washer.
- D. thread knob from end of clevis and then remove nut and washer.

126. You must install the pedal adjuster. You should first

- A. position knob on threaded end of clevis with lip engaged in retaining groove.
- B. insert threaded end of clevis into adjuster support from flared end.
- C. position bellcrank into clevis and install with bolt, aluminum washers, nut and cotter pin.
- D. thread knob onto clevis and secure with large washer and nut.

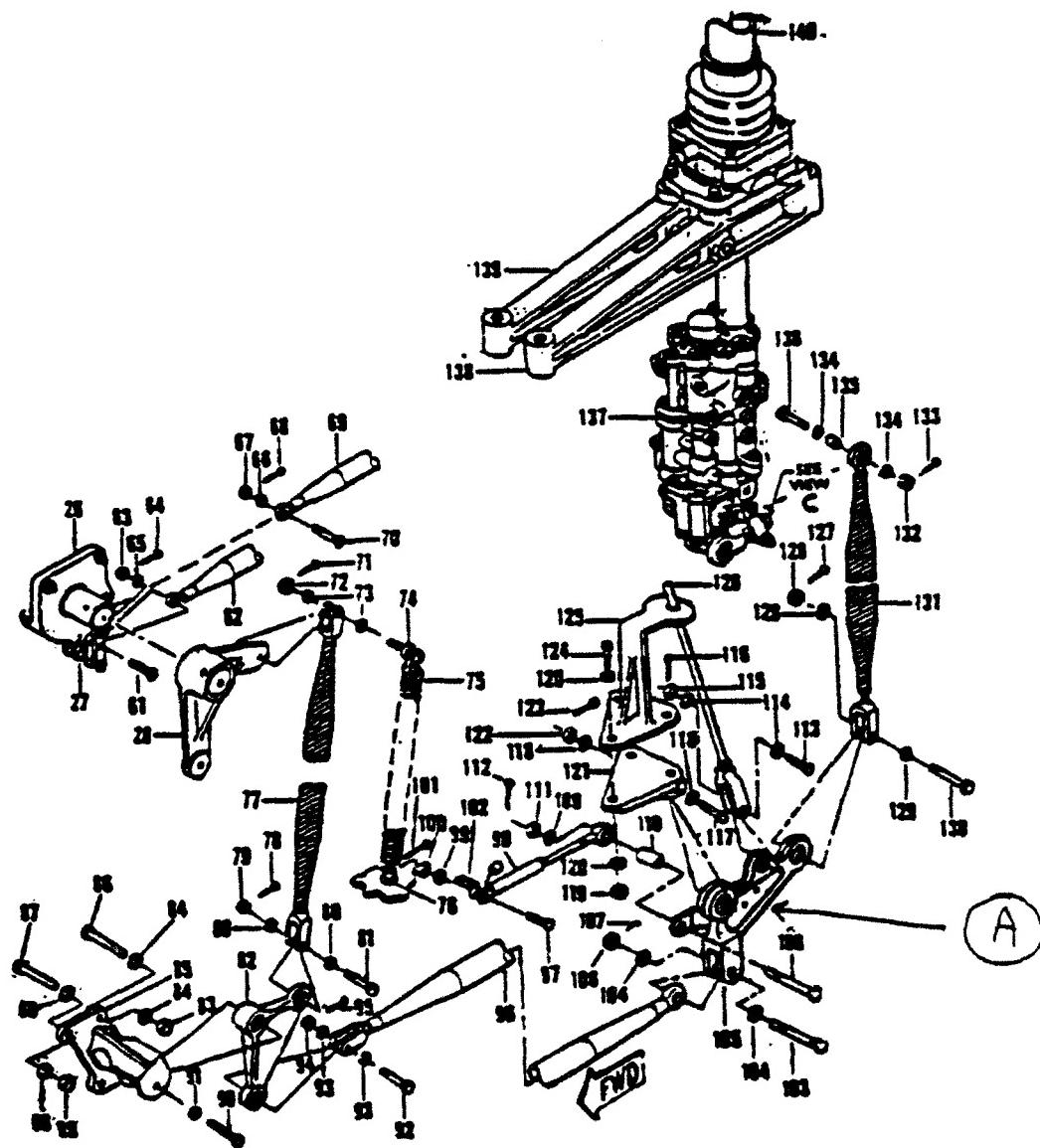
127. Washer M is a
- A. large steel.
  - B. large aluminum.
  - C. small steel.
  - D. small aluminum.
128. You have replaced the gunners pedals and the pedal adjuster. Before installing the access panels you should
- A. adjust and track tail rotor blades.
  - B. check pedal break-away force.
  - C. rig the directional control system.
  - D. check rigging of the directional control system.

**AIRCRAFT: UH-1N/AH-1W (6114)**

**R/R Collective Pitch Bellcrank (AH-1W)**

129. The maximum allowable width of a smooth dent on a control tube is equal to 20 percent of the outer tube diameter. How is this measured?
- A. micrometer
  - B. depth gage
  - C. outside caliper
  - D. 6 inch steel ruler (GGG-R-791)

Refer to the figure below in answering the following 6 questions.



130. You are to remove the collective pitch bellcrank (Bellcrank A). Which bolt must you remove to disconnect the collective control tube #96?
- A. #130
  - B. #113
  - C. #117
  - D. #103
131. Which bolt must you remove to disconnect bellcrank A from the support?
- A. #108
  - B. #103
  - C. #117
  - D. #130
132. You should disconnect Np droop cable assembly from bellcrank A by removing bolt
- A. #108.
  - B. #103.
  - C. #113.
  - D. #117.
133. How many spacers must be installed when replacing bellcrank A?
- A. 0
  - B. 1
  - C. 2
  - D. 3

134. While replacing the collective pitch bellcrank you notice some corrosion on component #137. Component #137 is a

- A. servo valve.
- B. servoactuator.
- C. pilot valve lever.
- D. Np droop cable assembly.

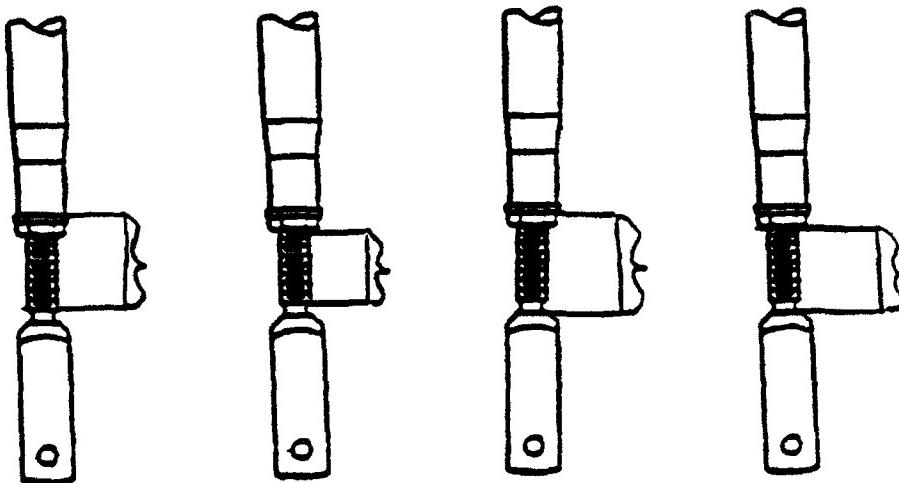
135. The crew chief has told you to remove the transducer. You should remove component

- A. #126.
- B. #27.
- C. #137.
- D. #98.

136. The maximum allowable tolerance of exposed thread is 1.0 inch. How is this measured?

A.      B.      C.      D.

- A. A
- B. B
- C. C
- D. D



137. What should you use to clean non-lubricated (Teflon) bearings?

- A. cleaning cloth MIL-C-85043 dampened with methylethyl-ketone (TT-M-261)
- B. PD-680
- C. freon
- D. bearing cleaning compound (MIL-C-8102)

**AIRCRAFT: UH-1N/AH-1W (6114)**

**TS Main Rotor (UH-1N)**

138. You are setting the minimum blade angle. You should adjust.

- A. only the red pitch change link.
- B. both pitch links equally.
- C. both pitch links simultaneously.
- D. first the red and then the white pitch change link.

139. How should you lockwire the pitch change links?

- A. lower nut to barrel and clevis; upper nut to barrel and clevis
- B. lower nut to barrel and clevis; upper nut to barrel
- C. lower nut to barrel; upper nut to barrel and clevis
- D. upper nut to barrel and clevis.

140. When setting minimum blade angle, what should the minimum angle be?

- A. 6 ( $\pm 1$ ) degrees
- B. 8 ( $\pm 1/2$ ) degrees
- C. 16 ( $\pm 1$ ) degrees
- D. 20 ( $\pm 2$ ) degrees

141. What size wire should you use to safety wire the pitch change link?

- A. 0.020
- B. 0.032
- C. 0.040
- D. shear wire

142. You have recorded the red and white blade angles. The minimum blade angle is determined by

- A. adding the angles and multiplying by 2.
- B. adding the angles and dividing by 2.
- C. adding the angles.
- D. adding the angles and multiplying by 2 and then dividing by 3.

143. What tool should you use to measure the minimum blade angle?

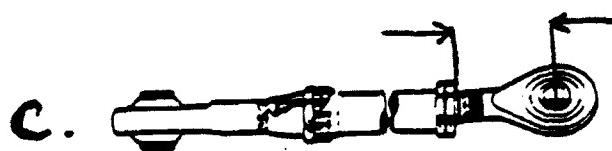
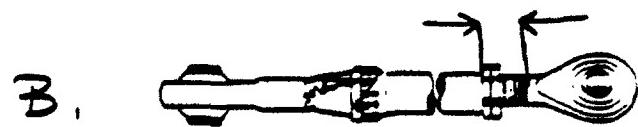
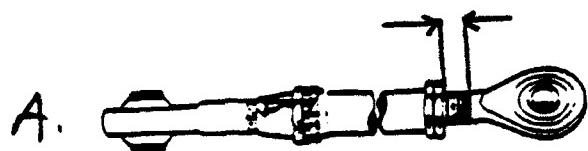
- A. micrometer
- B. protractor (GS18217)
- C. vernier scale
- D. blade scope

144. When setting the minimum blade angle the protractor should be placed

- A. spanwise on the outboard surface of blade grips.
- B. cordwise on the inboard surface of blade grips.
- C. spanwise on the inboard surface of blade grips.
- D. cordwise on the outboard surface of blade grips.

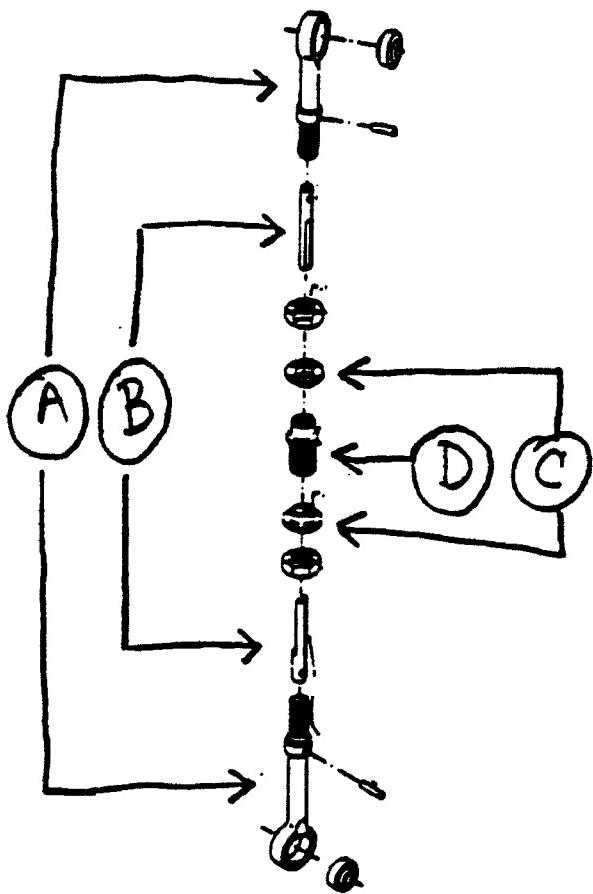
145. You are to set the minimum blade angle. What position should the collective and cyclic stick be in?
- A. collective: Full Down; cyclic: Neutral
  - B. collective: Full Up; cyclic: Full Forward
  - C. collective: Neutral; cyclic: Full Aft
  - D. collective: Full Up; cyclic: Full Left
146. You lengthen the pitch control rod by turning it
- A. clockwise.
  - B. counter clockwise.
  - C. full up position.
  - D. full down position.
147. When tightening the nuts on a pitch control rod, the nuts should be
- A. both right-hand thread.
  - B. both left-hand thread.
  - C. one left- and one right-hand thread.
  - D. both threads should turn in the direction of the rotary-wing head.

148. You have made a pitch control rod adjustment. You want to check for the maximum thread exposure. Where should you check?



- A. A
- B. B
- C. C
- D. D

149. The crew chief says the barrel is defective. What piece is he referring to?

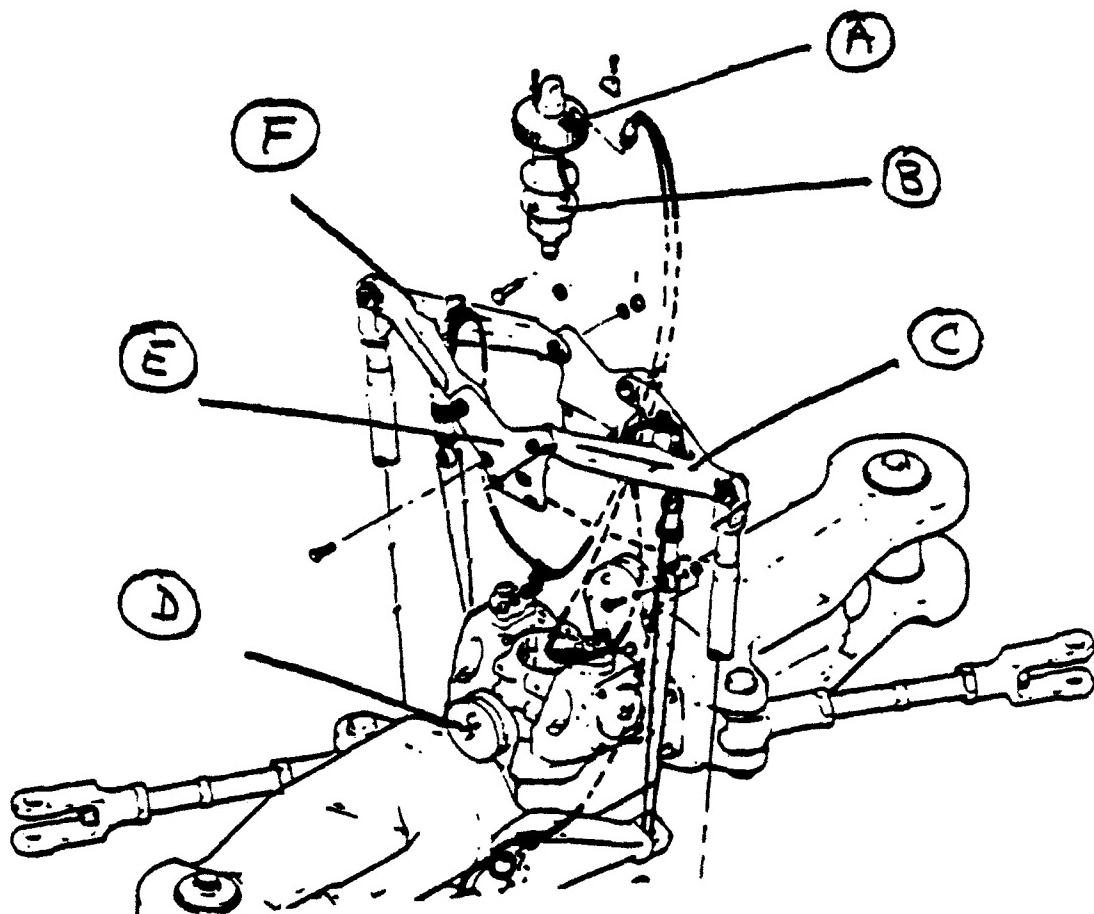


- A. A
- B. B
- C. C
- D. D

**AIRCRAFT: UH-1N/AH-1W (6114)**

For this portion of the test you may use the extract titled R/R Main Rotor (UH-1N).

Refer to the figure below in answering the following 2 questions.



150. You must check the slip ring assembly for security. You should check
- A. A
  - B. B
  - C. F
  - D. D
151. You must check the mixing lever for corrosion. You should check
- A. C
  - B. A
  - C. E
  - D. D
152. When torque is satisfactory, the crank must be turned until the torque indicator reads
- A. 520 foot-pounds.
  - B. zero.
  - C. less than 200 foot-pounds.
  - D. +/- 10 foot-pounds.

153. You are ready to torque. The torque limits are 520 to 780 foot-pounds. You should turn the crank handle until the torque indicator shows
- A. 500 foot-pounds.
  - B. 520 foot-pounds.
  - C. 650 foot-pounds.
  - D. 780 foot-pounds.
154. You have removed the rotor on the UH-1N. Your next step is to
- A. secure the cable to the standpipe.
  - B. remove the washer.
  - C. disconnect and remove cable.
  - D. remove the split cone set.
155. You have installed the crank handle into the power wrench. What should you do to loosen the nut?
- A. Push down until it clicks and then turn three turns to the left.
  - B. Turn clockwise.
  - C. Turn counter clockwise.
  - D. Turn counter clockwise until teeth engage and then turn clockwise.

156. You are removing the rotor head. You have inserted a 1-inch square drive bar into the square drive of wrench. What must you do next to ensure the drive bar will drop in the PD2659 socket?
- A. Push up on wrench arm.
  - B. Push up on knurled ratchet indexer.
  - C. Turn knurled ratchet indexer clockwise.
  - D. Turn knurled ratchet indexer counter clockwise.
157. You are to remove the retaining nut on the UH-1N. On helicopters not equipped with AFCS you should remove the
- A. support.
  - B. stabilizer bar.
  - C. control tubes.
  - D. pitch change links.
158. You are to remove the rotor head on the UH-1N. After disconnecting the cable you should
- A. remove pitch change link.
  - B. remove lockwire, bolt, and lock at the side of nut.
  - C. remove support with mixing levers.
  - D. remove control tubes.

159. You are removing the rotor head using the power dyne. After positioning the torque reaction adapter between the stabilizer bar mounts you should
- A. insert PD2501 power wrench in adapter.
  - B. place PD2501 power wrench on adapter ensuring that pins on wrench arm engage in two holes in adapter.
  - C. place PD2659 socket over top of nut.
  - D. align pins on wrench arm with pins on adapter.

HD-2254-303

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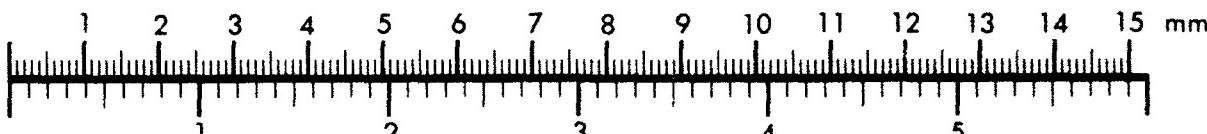
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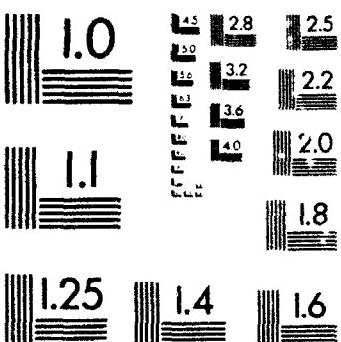
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**Centimeter**



**Inches**



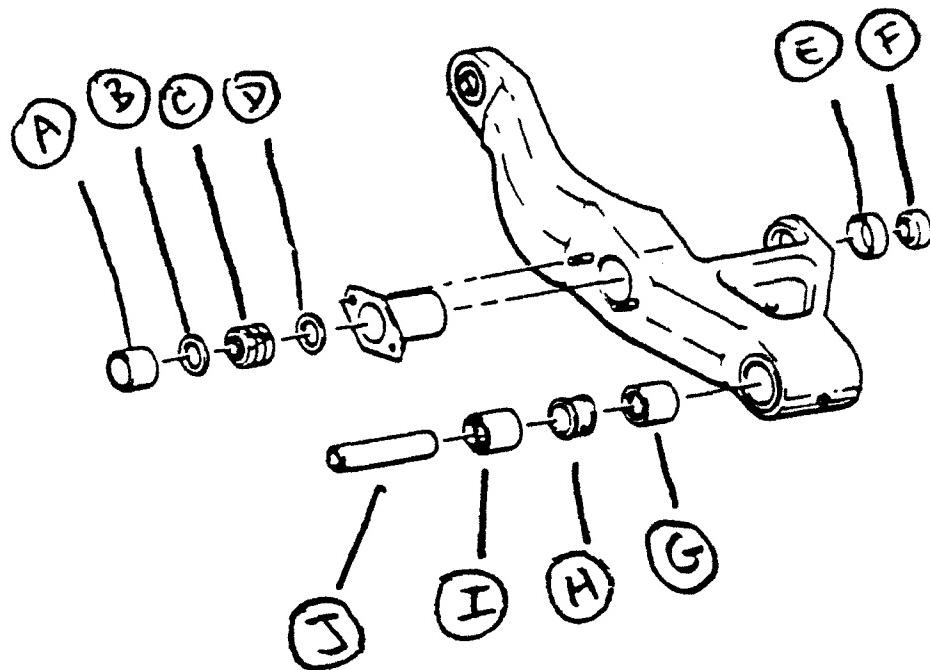
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**AIRCRAFT: UH-1N/AH-1W (6114)**

For this portion of the test you may use the extract titled "R/R Drive Link (UH-1N)."

160. You should lubricate scissor and hub through fittings with
  - A. anti-seize compound.
  - B. grease MIL-C-25537.
  - C. corrosion preventive compound MIL-C-16173.
  - D. a light coat of oil.
161. You are replacing the scissors assembly. After positioning the scissors on the aircraft you insert a bolt. You should then
  - A. temporarily remove spacer and install shim and nut.
  - B. temporarily remove spacer and install spacer and nut.
  - C. torque to 200 to 300 inch-pounds.
  - D. install nut and cotter pin.
162. You must replace the support scissor. After detaching the support scissor from the link assembly you will remove the bolt attaching it to the
  - A. collective sleeve.
  - B. hub.
  - C. drive plate.
  - D. flange.

Refer to the figure below in answering the following 2 questions.



163. You must replace the shims. You should replace

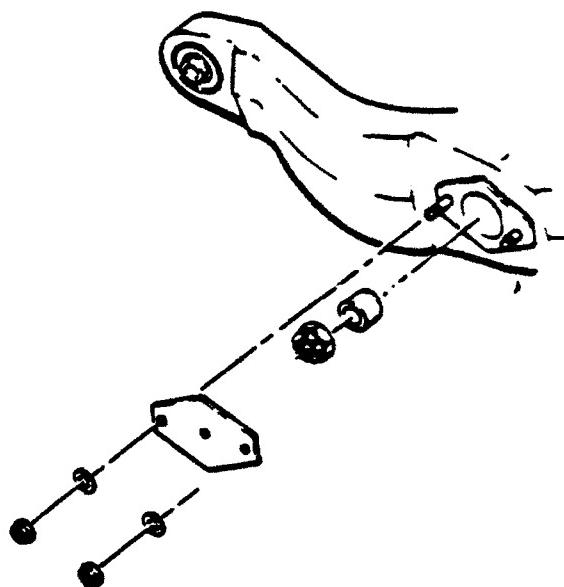
- A. A, C, E
- B. B, D
- C. D, E
- D. B, E

164. You must replace the inner race. You should remove

- A. A
- B. C
- C. J
- D. E

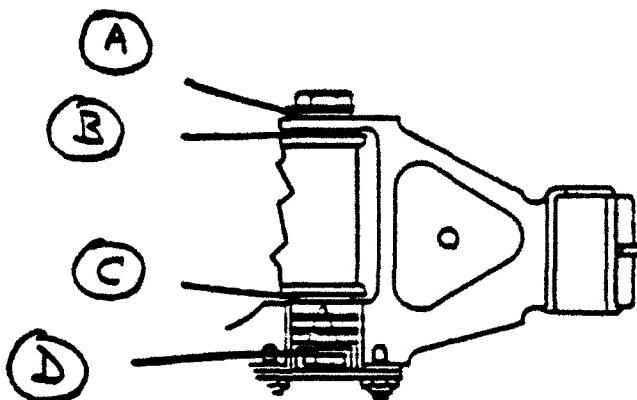
165. You must reassemble the scissors assembly and realize a piece (or pieces) is/are missing. What is missing?

- A. 2 washers
- B. 2 shims
- C. 1 cotter pin
- D. 1 bushing



166. The minimum clearance between the washer and the scissors is 0.010 inch. Where is this measured?

- A. A
- B. B
- C. C
- D. D



167. You have replaced the drive link. You measure end play and conclude it exceeds 0.090 inch. You should

- A. add shims.
- B. replace the thrust washer.
- C. replace the inner race.
- D. replace the inner race and shims.

168. You must measure the dimension of the gap to determine how much shim is necessary. You should measure between

- A. B and C
- B. C and E
- C. D and E
- D. A and E

